

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [02] with the following marked-up version of the paragraph:

[02] Computer applications that include visual design surfaces are commonly used to generate artifacts such as computer code or to automate processes. On a visual design surface, these artifacts are typically represented by shapes. The shapes ~~[[are]]~~ placed on the visual design surface are often arranged in a particular order and connected together in a particular fashion to perform specific functions. Each of the shapes also typically includes configuration parameters that are set by the user. After the user lays out the pattern of shapes and sets the appropriate configuration parameters, the design is compiled.

Please replace paragraph [03] with the following marked-up version of the paragraph:

[03] During the compilation process errors are identified and presented to the user. For example, if a variable has not been initialized a compilation error identifying this error is presented to the user. There are several disadvantages in waiting to identify errors until the compilation process. One disadvantage is that with large designs, it can be difficult for a user to remember the intended function or configuration of ~~[[a]]~~ an artifact at a later time.

Please replace paragraph [25] with the following marked-up version of the paragraph:

[25] Each shape in design section 202 includes one or more configuration parameters. As the user interacts with the design surface, configuration parameters are checked to ensure that they are in compliance with a predetermined set of rules. For example, send shape 204 may include a configuration parameter for identifying a protocol to use when sending data to port shape 206. A rule may require the protocol configuration parameter of send shape ~~[[202]]~~ 204 to match the protocol used by port shape 206. The predetermined set of rules may relate to the context in which a shape is being used. For example, a set of send rules may be used when a send/receive shape is used to send data. When the rule is violated, an inconspicuous icon, such as icon 212 may be displayed next to the shape to alert the user.

Please replace paragraph [29] with the following marked-up version of the paragraph:

[29] When a configuration rule is violated, in step 408 an icon is displayed next to the relevant shape or shapes. Figure 5A illustrates a suitable inconspicuous error icon 502. Error icon 504, shown in Figure 5B, represents a rollover state of icon 502. When a cursor is positioned over icon 502, icon 502 is replaced with icon 504. Alternatively, icons may be activated with keyboard commands. One advantage of having two different states is to alert the user that there is an actionable behavior on the relevant shape. Displaying a drop down arrow alerts the user that a drop down menu will be displayed when the icon is selected. Error icons 502 and 504 may be placed at the edge of a shape to minimize interfering with the design. Similarly, the icons may be placed next to the relevant shape. In step 410 it is determined whether the user has selected the error icon. When the user selects the error icon, in step 412 at least one proposed solution to the configuration error is displayed to the user. Figure 5C shows two proposed solutions 506 that are displayed to the user. A proposed solution may include a dialogue box. The dialogue box may prompt the user to initialize a variable or set a configuration parameter. ~~Of course text boxes, drop-down lists, buttons and other user interface controls may also be~~ Of course text boxes, drop-down lists, buttons and other user interface controls may also be placed in the drop-down menu itself, avoiding the need to launch a dialog or wizard, and allowing the user to perform editing in place. Other proposed solutions include creating a new design element, adding or connecting a shape, etc. One skilled in the art will appreciate that numerous additional and alternative proposed solutions may be used. The proposed solutions may be a function of the context of the design.